

REMARKS

ON

THE THEORY AND TREATMENT

OF

SCARLET FEVER:

WITH

BRIEF NOTICES OF THE DISEASE, AS IT PREVAILED
EPIDEMICALLY AT BRIDLINGTON, IN 1831.

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LONDON:

PUBLISHED BY HIGHLEY AND SON, FLEET-STREET.

MDCCCXXXV.

LONDON :—Printed by James Nichols, 46, Hoxton-Square.

R36045

PREFACE.

THE following is a faithful narrative of a recent visitation, in a certain district, of the Scarlet Fever. Owing to the subsequent prevalence, at irregular intervals, and in other parts of the island, of the same disease, in an equally malignant form, the writer has determined on giving a wider circulation to the following essay. He trusts that, in these pages, he has succeeded in developing sound views of its pathology, and contributed to establish more exact methods of practice. The paper was, in the first instance, submitted to the Medical and Chirurgical Society of London, before whom it was read; but it was not published in the Transactions of that learned body, on account of its extreme length. It obtained, however, a decided testimony of approbation from the then President, William Lawrence, Esq., as well as from others of its members. It afterwards appeared in the Edinburgh Medical and Surgical Journal, from which it is now re-printed. Dr. Tweedie, in the Cyclopædia of Practical Medicine,

has honoured it by the emphatic encomium, of its being "a most excellent *practical* paper."

It is now published as the first of a series of practical commentaries on some of the most important diseases of children; to which will succeed an essay on the nature and treatment of chronic diseases of the larynx, or organ of the voice, in adults.

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SCARLET FEVER.

THE father of English medicine, Sydenham, has philosophized on the scarlet fever less in unison with the data of a widely-extended observation, than with the *a priori* deduction of an exploded pathology. One would conclude, from the little attention which Sydenham has bestowed on the subject of scarlet fever, that the epidemics which he witnessed were of so mild a character, as scarcely to require the interposition of medicine. His plan of treatment, accordingly, corresponding with his estimate of the simplicity of the disease, excluded bleeding and every other active agency: "*Simplici hæc et naturali plane methodo, hoc morbi nomen (vix enim altius adsurgit) sine molestiâ aut periculo quovis facillime abigitur.*"* Everything was forbidden which he conceived likely to interfere with the hypothetical process of a *despumation* of the

* Thomæ Sydenham, M.D., Opera Universa, editio 1726, p. 260.

blood. His final conclusion is, that when the disease proves mortal, it is by the "*nimiâ medici diligentia*." So faithful an observer, so original a thinker, and one so decisive in action, could never thus have trifled with some of the epidemic forms of *scarlatina*, which have appeared in latter times.

The very converse of Sydenham's conclusion applies to a malignant epidemic of this kind, which still (December, 1831) lingers in this neighbourhood. Having originated, at an early period of the summer, a few miles north of Bridlington, where it proved very destructive, it progressively invaded the town, the quay, and the adjacent villages, with nearly equal characteristic virulence and fatality. The severity of the disease will be illustrated in the sequel; but a few circumstances in proof of it may here be mentioned in anticipation. Adults, when exposed to the contagious miasm, are affected usually by sore throat only, without the rash. But besides numerous cases of this kind, at least ten perfect, some of them severe examples of the disease, fell under my own observation. Heberden relates, as a very unusual occurrence, that "he had seen one man in it, who was four-and-thirty." And Sir Gilbert Blane has remarked, that he never saw a person turned of forty affected by it. Of two of my patients, both men, one was just forty, and the other was fifty-nine. In the former, notwithstanding the repeated application of leeches, to the number of sixty, the throat sloughed. The latter case was not equally severe, although dropsy followed the attack. In both, the

rash was partial, but succeeded by desquamation of the cuticle.

Infants at the breast, also, did not enjoy, as usual, an invariable exemption. In Dr. Mason Good's description of the worst form of *Rosalia paristhmica*,* he states "death to ensue shortly after the seventh day; sometimes on the sixth." But the Bridlington epidemic proved fatal, in many instances, on the third, and even as early as the second, day. A few died suffocated and apoplectic, within thirty-six hours from the first moment of attack, in defiance of every attempt to save them. These cases, in their cerebral and tracheal symptoms, and the rapidity of their destructive career, meet with a close parallel in the cases of death "from drinking boiling water from the spout of a tea-kettle," described by Dr. Marshall Hall and Mr. Stanley, in the twelfth volume of the Medico-Chirurgical Transactions. At the commencement of the epidemic, I have been assured by a most competent observer,† that, in several instances, death occurred in twelve hours, without any attempt at reaction, to obviate the collapse, which supervened on the cold stage. Again, the disease usually presents itself, in its simple and anginose varieties, not only with strongly-marked distinctive characters, but also with a large proportion of cases of the milder description. But in the present instance, comparatively few cases occurred in childhood, which were not combined with intense sore throat,

* Good's Study of Medicine, vol iii., p. 18.

† Mr. Hagyard, of Hunmanby.

or inflammation of a more important part. Lastly, the first stage of the disease was, in general, brief, reaction and inflammation rapidly succeeding, and hastening the subsequent more dangerous phenomena.

The occurrence of so severe an example of scarlet fever is agreeable to the analogy of all other epidemic maladies, as to their ever-varying range of mortality. *Rubeola*, for example, proved so fatal in London in 1807, as to hold blood-letting and every other remedy at defiance.* And in the island of Tobago, in 1818-19, "five hundred children fell victims to *pertussis*."† The writer, who has recorded this astounding fact, adds, "The extreme fatality of the disease on this occasion, has given me as much uneasiness as surprise, as it is one considered, by most writers, as being milder in warm than in cold countries." So far, indeed, from the severe epidemic *scarlatina*, which I am about to describe, being unique in its kind, it might be paralleled without any laborious research into the annals of medicine. To pass by the less accurate records of the sixteenth and seventeenth centuries, during which various severe epidemic forms of the malady are manifestly described as invading, by turn, every country in Europe, Dr. Willan mentions the irruption of a malignant scarlet fever at Paris, in 1743, which proved almost universally fatal, "many patients dying of the sore-throat in nine hours from the commencement of

* Bateman's Reports on the Diseases of London, p. 90.

† Quarterly Journal of Foreign Med. and Surg., vol. ii., p. 107.

the fever." Dr. Fothergill alludes to an epidemic scarlet fever at Bromley, near Bow, in Middlesex, in the winter of 1746, of so fatal a character, and one "that seemed to yield to no remedies or applications, that several of the inhabitants were greatly alarmed by it, some losing the greater part of their children, after a few days' indisposition."* Equally fatal epidemics were observed and recorded by Dr. Lettsom, in 1793,† by Dr. Sims, in 1798,‡ and by Dr. Robert Jackson, at the commencement of the present century. The cases of scarlet fever in the private practice of Sir Gilbert Blane, from 1795 to 1806, had no minor degree of mortality, the deaths being ten in thirty-nine cases, or one in four.¶ In Dr. Bateman's Reports on the Diseases of London, from 1804 to 1816, we find one exception, and but one, to as mild a form of the disease, probably, as that noticed by Sydenham. Traced through the reports of each successive year, it seldom even attained the severity which belonged to it in the autumn of 1808, when only one in thirty-six died.§ But the real exception to such uninterrupted freedom from danger occurs in Report xlv. And though the degree of mortality, which is not defined, fell very short, probably, of that we wish to parallel, it proves, at least, the main point,—that the fatality varies in scarlet fever as certainly as in other epidemic fevers, dysentery, or spasmodic cholera.

* Fothergill's Works, edition 1781, p. 199.

† Memoirs of the Medical Society, vol. iv., p. 280.

‡ Ibid, vol. v., p. 430.

¶ Medico-Chirurgical Transactions, vol. iv., p. 139.

§ Reports on the Diseases of London, p. 108.

“The scarlet fever,” he observes, “was generally accompanied by a severe affection of the throat; which, in many cases, continued to harass the patient after the usual term of the fever had elapsed, and, in several children, appeared to be the principal cause of the fatality of the disease. The simple rash, which yields readily to the cool treatment with little medicine, was seldom seen during this epidemic; and the period when cold washing seemed to be essentially remedial, was soon over.” Dr. Hamilton tells us, that “the mortality was great” in the epidemic *scarlatina* of Edinburgh in 1804.* “Dr. Lehman has published, in the twenty-second volume of Rust’s Magazine, a memoir, in which he observes, that an epidemic *scarlatina* prevailed at Torgau, in 1825, of so violent a character, that one in eight of those afflicted with it died, and that thirty patients, all of tender age, fell victims to it.”† Proofs of the occasional malignity of the disease might easily be multiplied; but these may suffice to correct any false impression, derived from the not less true, but opposite, accounts of its fatality, by Sydenham, Macgregor,‡ Dr. Carbutt,|| Mr. Alcock, and others.

The truth seems to be that, as Dr. Heberden has stated, “this distemper is sometimes so slight

* Hamilton on Purgatives, p. 62.

† Dewees’s Practice of Physic, vol. i., p. 225.

‡ Vide Macgregor’s Report of the Principal Natural Diseases amongst the Children of the Royal Military Asylum at Chelsea. The mortality was six in 131, or about one in twenty, Med. Chir. Trans., vol. v., p. 441.

|| North of England Med. and Surg. Journal, vol. i., p. 27.

as to require no remedies, and sometimes so violent as to admit of no relief;" or, in the more laconic language of Darwin, it differs in all degrees "from a flea-bite to the plague." For this description applies equally to the cases of any single epidemic, and to different epidemics as compared with each other. The authority of Dr. Cullen might be cited in illustration of the same view of the subject, if we assume the identity of his *scarlatina anginosa* and *cynanche maligna*, when prevailing epidemically. In the former, the bad cases were "not above one or two in a hundred;" while in the latter, "the proportion was reversed, and these mild cases were not one-fifth of the whole, while the rest were of the putrid and malignant kind." And of the epidemic *cynanche maligna*, which he has described, and which he states he had seen prevailing two or three times, he emphatically says, "most of the instances terminate fatally."* We are in like manner told by Dr. Binns, that "the children at Ackworth, in 1803, had, in general, the disease much more severely than those, who had it there about eight years before."†

The fact of this diversity in the character of epidemics is important, not merely as an object of curiosity in the annals of medicine, but as influencing treatment. It has been too much overlooked, however, by compilers of systems of medicine, which, embracing the ordinary forms of the disease only, leave the student unprepared to grap-

* Cullen's First Lines of the Practice of Physic, vol. ii., p. 191.

† Medical and Physical Journal, vol. xv., p. 492.

ple with its worst varieties ; and Sydenham's measures obviously bear no proportion to the demands of a severe epidemic. To what extent, indeed, a treatment founded on true pathology, and corresponding in activity with the severity of any given epidemic, would avail to lessen the ratio of its mortality, I am not prepared to say. My own experience favours the conclusion, that, with every allowance for the original malignity of the disease, its actual fatality is considerably under the control of art ; for in proportion to the vigour of my remedies was my success. Truth, indeed, demands some qualification of this remark ; and observation seems to warrant the assertion, that the disease, under certain circumstances, almost inevitably destroys life. Dr. Currie has recorded, as the result of his experience, that a form of the disease, which he thinks the epithet *purpurata* would designate better than *scarlatina*, and to which the cold affusion is inapplicable, is so irresistibly fatal, that "all remedies have been equally unsuccessful ;"* and Dr. Sims, in summing up the inefficacy of every plan adopted in the London epidemic *scarlatina anginosa* of 1798, candidly avows, "that from experience he can venture to recommend nothing, and that whatever means are used must be prompt and powerful." †

With all the aids of enlightened pathology, we have still to grapple with a combination of circumstances, which appears to be almost insuperable in

* Currie's Medical Reports, &c., vol. ii., p. 44.

† Memoirs of the Medical Society, vol. v., p. 430.

the present state of medical science. That combination is an overpowering miasm, acting in quick succession, with excessive inflammation or congestion of one or more vital organs or tissues, and concurring with a weakly, strumous, or otherwise diseased organization; for a pre-disposition to organic lesion often exists in parts enfeebled and left irritable by former acute or chronic affections. The difficulties contemplated in such a case are greatly augmented by the well known intractable nature of exanthematous inflammation of the internal structures. The danger to be encountered is nearly equal, whether the collapse in such cases be with or without reaction. Mr. Alcock, indeed, tells us, that "the mortality of this disease has been considerably overrated."* But though he speaks from observation, and though, in his hands, prompt and energetic treatment would render an epidemic of ordinary severity harmless; yet, when he tells us, that "in the greater number of cases it requires but little medical treatment, when the general management is not defective," there is too much room to infer, that his conclusions, like those of Sydenham and De Gorter, have been drawn from phenomena within too limited a range of observation. "When measles or *scarlatina* appear epidemically, it is highly important," observes Martinet, "to study the character of the epidemic, and modify our plan of treatment according to the general influence of remedies over it, and the com-

* Medical Intelligencor, 1820, p. 201.

binations of symptoms in each case.”* Such ought to be the practical result of studying the character of epidemics, the ascertained malignity of which should animate, not paralyze, our exertions; and even the want of success, while it may in part be extenuated by considerations regarding the intensity of the disease, and the imperfections of our art, should lead us to attribute our failures rather to a want on our part of corresponding knowledge of the subject, talent for observation, or decision in the use of appropriate remedies. Dr. Hamilton’s account of the scarlet fever in Heriot’s hospital, in the autumn of 1804, furnishes us with an example of rare observation of the characters of a very peculiar epidemic, leading to a judicious and tolerably exact adaptation of the most successful remedies.

The epidemic scarlet fever, which it is my task to describe, exhibited the following varieties:—

1. The majority of cases manifested a high degree of fever, with more or less of delirium, and an intense inflammation of the fauces. With considerable irregularity in the developement of animal heat, however, in this, as in the severe epidemic described by Dr. Bateman, the period when cold washing promised to be remedial was soon over; but tepid ablutions were applicable throughout. Whether the brain was more or less implicated, the throat almost invariably ulcerated or sloughed, especially when local depletion was inadequately

* Martinet’s Manual of Therapeutics, translated by Dr. Morton. p. 294.

employed, or trusted to alone. In neglected cases of this kind, the extension of the inflammation, from the mucous membrane of the fauces to the excretory duct of the parotid and submaxillary glands, exasperated, doubtless, by the sympathetic irritation dependent on the rapid sloughing of the throat, produced excessive tumefaction of those glands and the surrounding cellular tissue, with consequent mechanical obstruction to the return of blood from the brain. A low fever, with delirium, sometimes slowly, sometimes rapidly, terminated their sufferings. In the latter stages, from the extension of the inflammation to the larynx, this variety was prone to lapse into the fourth, or that of bronchial inflammation. All were not attacked with equal severity, the symptoms being mild in a few instances.

2. In some of the cases gastric irritation, from the extension of the inflammation of the fauces down the œsophagus to the stomach, greatly augmented the danger, by adding to the extent and importance of the inflamed surface of mucous membranes, interrupting the rash, rendering the operation of purgatives more precarious, and exasperating the irritation of the nervous system. Occasionally the whole alimentary canal seemed to participate in the affection of its upper portions. The fatal epidemic of 1793, from Dr. Lettsom's description of it, obviously corresponded closely with this variety. It differed, at the same time, from those described by Drs. Fothergill and Hamilton, because decided affections of the abdominal

portions of the alimentary canal were comparatively rare in this epidemic.

3. In several cases active delirium, or coma, set in at once, or within a few days, after a delusively mild appearance of the disease. In the former, the excitement ran extravagantly high, the patient singing and raving by turns, until signs of oppression supervened on those of exalted sensibility. In the latter, there was involuntary evacuation of the fæces within a few hours of the attack. The eyes were ferrety in both, but muddier in the latter; in which, also, the skin was cooler, and the rash duskier. In one example, which partook of the characters of both these forms of cerebral disorder, there was extreme coldness of the extremities, with blueness of the fingers and lips; and petechiæ mingled with the eruption. Life was extinguished, in these cases, within two, three, or, at the most, four days after the developement of the cerebral symptoms. The throat was sometimes severely inflamed; at other times the transition of the inflammation to the arachnoid membrane was almost complete. *Subsultus tendinum* occasionally appeared very early.

4. In a still greater number of cases than those of the third variety, a marked bronchial inflammation, with consequent sensorial oppression, sometimes extinguished life with equal rapidity; in other instances, in which it came on later by an extension of the *cynanche tonsillaris* to the trachea, death ensued in a week or ten days. In this form of the disease, the rash was invariably interrupted,

faded, assumed a copperish hue, or wholly disappeared. The pulse was quick and feeble; the skin, for the most part, cool; the tongue dry and glazed; and the whole system rapidly laid prostrate.

I also witnessed some clear examples of the disease, which arranged themselves under none of these varieties, but corresponded with the irregular congestive form described by Dr. Armstrong. The most striking features were, the cold stage, with repetitions of it so intense, as to resemble approaching collapse; occasional paroxysms of febrile heat, observing no periodical exacerbations; excessive irritation of the nervous system; the rash faintly emerging and disappearing, but never establishing itself; black and offensive stools; the throat but slightly inflamed; the pulse varying most remarkably in frequency; and the tongue furred with red papillæ, but always moist.

The following were among the most prominent sequelæ of the disease: General dropsy occurred, in a few instances, from exposure to cold during convalescence, but proved manageable. In one instance, not resulting from cold, but obviously dependent on chronic visceral inflammation, hydrothorax supervened, and proved fatal. In one case, a married female, there was inflammation and abscess of the breast. Abscess in the neck, equally annoying to the patient and the surgeon, was a frequent occurrence; but this inconvenience seldom, if ever, arose after general bleeding. Severe epistaxis was controlled, in one case, with difficulty; and the child rallied. Dr. Fothergill, though a

humoral pathologist, had the sagacity to guess the true cause of these severe hemorrhages, which point, and not obscurely, to a better pathology. "It has happened," says he, "in this distemper, that hemorrhage from the nose and mouth have suddenly carried off the patient. I have heard of the like accident from bleeding at the ear; but these fatal discharges most commonly happen after the patient has been ill several days; and it seems more probable, that they proceed from the separation of a slough from the branch of an artery, rather than from the fulness of the vessels, or an effort of nature to relieve herself by a salutary crisis. This, I find, was also Heredia's opinion, who considers a discharge of blood, either from the mouth or nose, as a sign of the utmost danger."* Hemorrhage from the intestines attacked another child after the fever had declined; and its removal was followed by purulent ophthalmia. This patient had not been visited professionally in the earlier stages; and it eventually sunk under reiterated irritation. Chronic dysentery appeared in one solitary case, after the subsidence of fever. In another, ulceration and sloughing of the throat, as well as of the leech-bites externally, from pure constitutional and strumous debility, continued long after the fever had vanished, as late, indeed, as the fourth week; when an extension of the ulcerative process to the larynx destroyed life by suffocation. The child had been moderately depleted by leeches only; and ammonia,

* Fothergill's Works, p. 213.

quinine, and wine, were employed in aid of its enfeebled powers.

The fatality of the disease, though not an absolute measure, is yet a powerful illustration of its severity. In the treatment of the first variety, my success was, on the whole, encouraging, though it would probably have been greater by a freer use of the lancet. But in the third and fourth varieties the fatality was painfully great, though eventually lessened, at least in the third species, by general bleeding in aid of other measures. Five of the fatal cases might fairly be considered beyond the reach of art, when I first saw them, from gross neglect. Something is also to be laid to the charge of ignorance among the humbler classes, who often fail to second the efforts of the surgeon, by not faithfully administering medicine, employing the syringe, or ventilating the sick room; to say nothing of the injuriously wretched accommodations too often met with in the cottages of the poor; to which may be added, the infrequency of our visits to distant villages, and late application for relief. As in epidemic cholera, too, the weakest and worst constitutions are almost invariably seized by the malady, and swell the amount of its mortality. The young and delicate are among its first victims; and, as is well known, not unfrequently puerperal women. Hereditary diseases, also, of the class *Cachexiæ*, tend greatly to aggravate the operation of this, as of other morbid poisons. With the legitimate deduction of the five cases above alluded to, the mortality in the whole number was in the

proportion of thirteen in eighty-one, or about one in six.

Our view of the disease has been hitherto general, embracing an account of a few of its peculiarities, and a description of its varieties; including, also, some mention of its sequelæ, and a statement of its fatality. The recital of a few cases will now enable our readers to obtain a more minute and thorough insight into its real nature; which will be clearly traced in the three following examples occurring in my own family. And having had ample opportunity* narrowly to watch its varied aspects, and promptly to meet its most urgent indications, a full description of the phenomena, which I observed will furnish additional data for the observations on the theory and treatment of scarlet fever, which will be found at the close.

Miss S., a vigorous girl, æt. 12, was attacked with sore throat, October 23d, in the morning. The fauces had a deep exanthematous blush, with the usual signs of incipient fever. During the first three days the fever advanced with increasing impetuosity, the pulse rising to one hundred and forty, tense and resisting. The head and throat continued intensely painful, and the latter more vividly inflamed, in defiance of the application of thirty-eight leeches to the external fauces and temples, aided by free purgation with calomel and tartrized infusion of senna. Delirium of an active kind, producing a disposition to get out of bed, talk

* I was just convalescent from an attack of severe bronchial and pulmonary inflammation, but unable to leave home.

incessantly, and sometimes sing, set in on the fourth night, and continued uninterruptedly about forty-eight hours; it was preceded by oppression at the præcordia, loud moanings, ineffectual retchings, and distressing jactitation. Various forms of medicine failed to restrain the sickness. Great pain being complained of in the course of the œsophagus, and the tongue putting on a glazed appearance towards its point, a few leeches were applied opposite to the seat of pain, with evident relief of that symptom. Sickness still continuing, leeches were again applied to the epigastrium, followed by free calomel purgation; these measures gave relief to that symptom also. The pulse now dropped to one hundred and twenty, the tongue became moist, the countenance lost its anxious expression, and tranquillity, with a disposition to sleep, supplanted the moaning, tossing, and delirious excitement. Actual debility having resulted from such continued irritation, and the measures adopted for its removal, I commenced on the sixth day with carbonate of ammonia, in doses of five grains every fourth hour, and substituted rhubarb and *sal polychrest* for more drastic purgatives. The syringe now dislodged immense quantities of coagulable lymph, intermingled with sloughs. Sleep became more profound under the cordial plan of treatment, but without any signs of coma; and an easy position on the side, with the limbs half bent, delightfully relieved the picture, when she lay supine and immoveable on her back. She slept, almost uninterruptedly, about thirty-six hours, during which it was diffi-

cult to give either food or medicine. The consequence was, an alarming increase of debility and emaciation, which, as sleep declined, was gradually repaired by nourishing food, and alternate doses of quinine and ammonia. The fauces, also, from neglect of the syringe, showed a greater abrasion of the surface, and more surrounding inflammation, in addition to the frightful ravages first discoverable on the separation of the sloughs. By the persevering use of detergent gargles, and painting the ulcers, by a camel's hair brush, with a solution of nitrate of silver,* aided by such means as improved the general health, these symptoms rapidly declined.

This severe case, which was a specimen of the first variety blended with the second, now went on satisfactorily, with one or two unimportant sequelæ. For some time there was considerable pain in each act of deglutition, at the lower part of the sternum, as if slight ulceration remained in the œsophagus. The food was made as demulcent as possible, and the sternum covered with a white pitch plaster. The throat, also, continued to improve; but several glands in the neck, on both sides, became inflamed and swollen, and the irritation was twice renewed, on one side, with suppuration. I should have before mentioned a slight enlargement of the sublingual and parotid glands, at an early period of the disease, as well as recorded the appearance of the rash, which came out freely on the trunk, but

* Argenti Nitr., gr. x., Aquæ distill., i. oz., ft. lotio.

was obviously retarded in its developement on the extremities, by the extension of the inflammation of the mucous membrane of the fauces, to that of the œsophagus and stomach. The little patient herself, on becoming rational, spontaneously remarked to me, "Papa, I believe I owe my life to the leeches applied to the stomach; no one but myself can imagine the benefit, which I immediately received."

My second son, G. S.,* æt. 8, fell into the disease October 26th. The attack was insidiously mild; but the throat was inflamed, and I took the precaution to leech the external fauces the first two days, in addition to the Hamiltonian method of purgation. On the morning of the 28th the throat looked worse, the night had been more restless, and the pulse was quicker and sharper. Ten more leeches were applied. Insidiously mild in its appearance, there was, from the beginning, paleness of the face and lips, a partial and transitory cutaneous efflorescence, and a dejection of mind, which, indicative of some smothered disease, excited apprehension of the future. At four o'clock, P.M., after awaking from a snoring sleep, in a moment he became furiously mad (*delirium ferox*). His shrieks and yells filled the house; he leaped from the bed, bit, spat, grinned, and struggled so

* My oldest son, H. S., æt. 9, suffered at the same time, from the first variety of the disease, but in a comparatively mild and open form. Ten leeches applied twice to the fauces, with free purging, moderated the local inflammation and general fever, and he was convalescent in a week.

violently, as to require the coercion of three or four persons. Every attempt to soothe him was but throwing oil on the flames. The fever was intense, the pulse one hundred and fifty, and vibratory in the extreme. These symptoms, coupled with the total disappearance of the rash, which had partially appeared on the trunk, showed that the inflammation was transferred to the membranes of the brain. I instantly opened a vein in the arm, and abstracted ten ounces of blood. The approach of syncope calmed the delirium, and the tongue became moist. This was followed up by calomel, of which he took fifteen grains, in three doses, in the course of eighteen hours, aided by jalap and scammony; but such was the torpor of the bowels, that little impression could be made on them by these means. The delirious paroxysm returned on the afternoon of the 29th, in spite of the application of twelve leeches to the temples in the morning, but was not equally violent. Under the direction of Dr. Thorp, of Leeds,* who happily called on me at noon, on his return from Scarborough, I again met the active delirium by another bleeding, to the extent of seven ounces. A vein being opened in each arm, a quicker impression was made, at a less expense of the vital fluid. Six leeches, also, were applied to the epigastrium, as he winced under pressure. Tartarized infusion of senna, occasionally quick-

* With my best acknowledgments to Dr. Thorp, I beg also to record my sense of the kind and valuable services rendered me during the whole of these afflictions by Drs. Mayo and Oxley, of the Quay, and my brother from Beverley.

ened by smaller doses of calomel and jalap, was continued, but with unsatisfactory results. On the morning of the 30th there was a more palpable remission of the symptoms; the tongue cleaner; the mind less excited, though not steadily rational; and less grinding of the teeth, which had been, throughout, a prominent symptom. Towards evening the delirious paroxysm returned, but in a mitigated form; and an injection being administered, it passed off with little violence. The fever and torpid bowels continued. On the 31st he had slept better, and was more rational on awaking: Pulse, one hundred and twenty; and soft. The throat, of the pain in which he invariably complained with each exacerbation of the fever, was better; and there was some improvement in the evacuations. A febricula came on a few times, each succeeding evening.

Steady attention to the state of the bowels, and mild nourishment, constituted the remainder of the treatment of this example of the third variety of the disease, until convalescence approached, which was promoted by quinine, and the cautious allowance of a more generous diet. He was convalescent within the fortnight. The inflamed throat secreted a few flakes of coagulable lymph, but never sloughed. The blood he lost by the lancet and leeches, allowing three drachms to each leech, amounted to thirty-two ounces. I should have mentioned that the blood was exquisitely sisy, the crassamentum being perfectly spherical, and the buffy coat deeply cupped, and contracted to

the size of half a crown. No extraordinary debility ensued.

My pupil, Mr. R. F., æt. 18, became decidedly ill October 30th, after complaining a few days of slight sore throat, with catarrhal symptoms. He had imprudently washed his head. With acute fever, the tonsils were slightly inflamed; but there was deep-seated inflammation in the pharynx, corresponding with Dr. Cullen's fourth species of *cynanche*: "*Cynanche (pharyngea) cum rubore in imis præsertim faucibus.*" Calomel and James's Powder, in the dose of five grains each, with senna mixture, produced vomiting, with but little action on the bowels. October 31st: Hot skin; pulse one hundred and twenty, and sharp; intense thirst; continued vomiting; rash struggling to emerge on the neck and breast. One general bleeding to half a pound, producing a slight tendency to syncope, greatly lessened the pain of the throat, and moderated the sickness for some hours. Six grains of calomel, with tartarized infusion of senna, operated copiously; but the vomiting again returned. November 1st: The posterior fauces being still deeply inflamed, twenty leeches were applied externally; and as nausea and vomiting continued, and the rash had nearly disappeared, fourteen leeches were ordered to the epigastrium, P.M. Such excessive sickness, accompanied with extreme depression of strength and spirits, indicated the serious invasion of an organ essential to life; in fact, I dreaded the approach of *gastritis*, from the following assemblage of phenomena: A dry and

brownish tongue ; the lips parched and chopped, the cuticle of which peeled off in thick flakes ; the pulse depressed and sharp ; and the bowels torpid, and their excretions most unsatisfactory ; but as delirium kept off, and purgatives were beginning to act, I trusted to perseverance in their employment. Under their increasing influence, nausea diminished ; and as the stomach began to bear liquids better, I aided the calomel by jalap, which at length produced bilious evacuations. November 3d : By persisting in the Hamiltonian plan, the tongue had improved ; the sore throat vanished ; sleep had returned ; the bowels acted correctly ; there was less thirst ; appetite returning ; the pulse was one hundred and six, and soft ; there was a genial glow on the skin ; and the rash had reappeared freely on the chest and extremities. The citrate of ammonia, in an effervescing state, with camphor mixture, was ordered. My patient was convalescent within ten days. This was a well-marked case of the second variety.

The remarks of Sydenham, when not transgressing the range of the phenomena of simple scarlet fever, contain the germ of a sound observant philosophy. The skin is an organ, which discharges certain vicarious offices both in health and disease ; and it is unsafe to interfere with its functions, except when they cease to be salutary. Happily the indications of such a devious course are cognizable in all the exanthemata. The doctrine of Sydenham, not rudely to interrupt the order of nature, has been recognised by the highest

authorities down to our own times. We may cite two or three of the moderns in illustration. "Some little deference," says Dr. James Johnson, "we conceive is to be paid to nature in this specific operation; and her work should not be rashly interfered with, until she appears to be going wrong."* The same conclusion results from the reasonings of Dr. Robert Jackson; who has shown that, in the eruptive diseases of specific contagion, by no violent methods can the attempt to restore the natural harmony of the system be made "without eminent risk, the movements being so rooted, that they must be permitted to go on to the appointed period and usual form of termination, unless where they absolutely threaten danger to life," or, as he elsewhere expresses it, "unless in evident symptoms of inflammation." And Martinet cautions us, when our dread even of a deviation in the processes of nature is justly excited, not rashly to interrupt her proceedings. "We must not, therefore," says he, "whenever the internal mucous membranes exhibit signs of irritation, hastily employ powerful antiphlogistic remedies, but bear in mind, that its natural tendency is to diminish, as eruption appears on the skin."† We are furnished with an instructive analogy in measles, when, as frequently happens, relief of the pectoral symptoms follows the appearance of the eruption. Steadily as this principle should be kept in view, we ought to be aware, at the same time, of the

* *Medico-Chir. Review*, Dec., 1820.

† *Manual of Therapeutics*, p. 293.

occasional departures from general rules in which nature herself indulges without injury. We sometimes observe in a family, where the disease has pursued its usual course, that one or two have had inflammation of the mucous membrane of the fauces and smart fever, but with no rash, in spite of the employment of the warm bath, and without any other internal affection as an equivalent. Hence Heberden, in speaking of the eruption in simple scarlet fever, observes, "The redness of the skin affords no certain mark of the degree or event of the disorder. I have seen it become much more florid without any relief to the patient, and grow pale without any ill consequence."*

The superiority of the practice of the moderns over that of their predecessors consists in the discovery, that we may safely assist without interrupting the processes of nature, and in having ascertained, with tolerable precision, how far, in such auxiliary efforts, we may venture to go. The knowledge of these principles created a new æra in medical science. Such was Sydenham's horror of all interference, that he forbade even the use of glysters; and, "upon procuring a few stools with manna," Dr. Fothergill gravely tells us, "the redness of the skin has disappeared, and the flux to the throat has been surprisingly increased."† Thus an inference is derived from the purgative plan, which further observation assigns to the defect, not to the excess, of the remedy! From the

* Heberden's Commentaries, p. 19.

† Fothergill's Works, p. 215.

authorities quoted by Dr. Hamilton,* as favourable to the use of purgative medicines in this disease, it is evident that observation was gradually removing those hypothetical terrors which, before his time, had greatly circumscribed their employment. But it was Hamilton himself, who achieved the complete triumph over the prejudices of past ages; and the bold, but successful, experiments of Currie had just added another trophy to the rapid advances of medical science.

By purgatives, the cold or tepid affusion, and, in certain states of the system, the warm bath, free ventilation, and the whole antiphlogistic regimen, much may be done in the earlier stages of scarlet fever to favour the natural and safe developement of the disease. Most of the epidemics described by Dr. Bateman did well under what he calls "the simple treatment of early purgatives of calomel, (with emetics in some instances,) diaphoretics, and cold washing." The late Dr. Armstrong has gone a step farther in attempting to co-operate with nature; his object being to alleviate the symptoms of the first stage of oppression, and thus, as far as possible, annihilate in embryo the rudiments of future mischief. His plan is, to employ "a brisk purgative first; a mild emetic next; and the tepid bath last." In addition to which, in cases of palpable congestion of an important vital organ, after using the warm bath, strongly impregnated with salt, he has recourse to a moderate

* Hamilton on Purgatives, p. 72.

local or general bleeding.* Martinet likewise observes, (p. 292,) that “when the eruption is endeavouring to establish itself, pediluvia, impregnated with mustard, are very useful in promoting its developement.” The views of pathology embraced in these recommendations, take for granted the great liability of nature to fail in accomplishing her purposes, or to depart from a safe and salutary course. And Dr. Armstrong has deserved well of the profession, by the rare talent for observation, which he has shown in detecting and describing many of the hitherto undefined eccentricities of nature’s most untoward movements. The views of this physician, much as they have been objected to, are countenanced by Martinet in the following passage: “But these exanthemata do not always pass through their various stages with the same regularity; thus, sometimes, at the commencement of the patient’s illness, a complication of sympathetic phenomena, and those of a very serious nature, throw the utmost obscurity over even the nature of the disease, and exceedingly embarrass the practitioner in treating it. Of this description are cerebral congestions, agitation, perpetual restlessness, great uneasiness, sense of suffocation, oppressive breathing, languor, headach, prostration of strength, collapse, with or without reaction, &c.” † But if there be one individual, who more than another has thrown a clear and steady light on the pathology of scarlet fever, it is

* Armstrong on Scarlet Fever, Measles, &c., p. 34.

† Martinet’s Manual, p. 292.

Mr. Alcock. While he, too, recognises the principle, that "the disease is not to be treated by remedies which too powerfully depress the powers of the constitution," his pathological inquiries into the state of the mucous membranes, in all the exanthemata, have led him to the important conclusion, "that in every severe case of measles, small-pox, and scarlet fever, the mucous membranes are implicated;"* in other words, involved in inflammation; "the proof of which, in many cases, has been rendered evident on dissection." Mr. Alcock's discoveries would have been anticipated, had the earlier observers completed by the scalpel what mere observation of symptoms left imperfect in their pathology. Thus Dr. Fordyce, in his description of "the erysipelatous sore throat, or sore throat attended with ulcers," ascertained, by dint of observation, the principal seat of the disease, and the extensive hold which it takes of the internal mucous membranes. His language is remarkable: "At the same time, if the disease be violent, the mucous membrane of the other parts of the body is affected, and sickness, vomiting, and sometimes purging, come on at the beginning; these generally leave the patient in about twenty-four hours; but if they continue, they add very much to the danger. The eyes are also red and watery, the membrane of the nostrils is inflamed, a watery stimulating fluid runs from it, and sometimes hemorrhages ensue, which are often fatal, if

* Medical Intelligencer, 1820, p. 196.

they arise the third or fourth day, or afterwards. There are also instances of the *vagina's* being inflamed and exulcerated, and of the *menstrua* coming on, although it be not their usual period. After a day or two, the skin of the extremities and of the throat externally is often affected with erysipelatous inflammation, and little eruptions take place, relieving the sickness, purging, and other symptoms, arising from the mucous membrane of the intestines being diseased.* His description of the erysipelatous sore throat corresponds so closely with the symptoms of the anginose scarlet fever, as to render their identity at least probable. His hypothetical distinction between irritation and inflammation, the former of which he considered the essence of the disease, and as naturally associated with debility, led him to discard "evacuations, especially by bleeding and purging, as not only useless but detrimental." To his important conclusion, that the mucous membranes are implicated in the severe forms of scarlet fever, Mr. Alcock has subjoined another, which adds weight to the former, that "when the inflammation of a part of the mucous membrane is severe, it is more apt to run a rapid course, when attendant on the exanthemata, than under other circumstances." In confirmation of this highly-important opinion, we may quote additional authorities. Thus, Dr. Bateman remarks, that "the most unyielding modifications of pneumonia have occurred as the sequelæ

* Fordyce's Elements of the Practice of Physic, p. 309.

of measles, or have supervened on hooping-cough ; under both of which circumstances the ordinary remedies appear to be less efficacious than in the more simple forms of pneumonic disease." A similar remark holds good of the transition of other eruptive diseases of the skin to the internal mucous membranes. "Bronchitis," says Dr. Hastings, "arising from cutaneous diseases, is more dangerous than that proceeding from cold."*

We have remarked that our predecessors, though they occasionally approached the confines of true pathology, fell short of it from their limited knowledge of morbid anatomy. "In one that was opened after death," says Dr. Sims, "the *aspera arteria* was found lined with this matter, (coagulable lymph,) like what is said of the croup. From this, and the disappearance of the ulcers in the fauces, and other symptoms already mentioned, in many fatal cases, I am led to suppose, that the visible disease in the throat was by much the least part of it ; and that, in bad cases, it spread down to the lungs and stomach, and even perhaps through the alimentary canal."†

These conjectures, the rapid advances of this department of medical science have amply confirmed. The limited knowledge of morbid anatomy alluded to, may, therefore, be pleaded in excuse of the vague theories of past ages ; for, until the present century, but little can be gleaned on the

* Hastings's Treatise on Inflammation of the Mucous Membrane of the Lungs, pp. 207, 228, 230, 243.

† Memoirs of the Med. Society, vol. i., p. 437.

subject from the writers on this disease. Withering mentions a solitary dissection of Sennertus, who found great ravages in the lungs and the liver. But so late as 1802, Dr. Pascalis, of Philadelphia, remarks, that "dissection has as yet afforded but little elucidation as to the nature of this disease."* Since that time, however, the morbid anatomy of scarlet fever has been sedulously cultivated; and, of such inquiries, this is the result, that the mucous surfaces seem to be those parts of the system on which the morbid poison operates in *scarlatina*, except when, from its more violent invasion of the nervous system, the larger viscera suffer through direct sympathy. In his enumeration of the morbid appearances, Dr. Armstrong speaks of "the brain, the liver, the stomach, the intestines, and the lungs, as the parts most often inflamed,"† not excepting "the fauces and mucous membrane of the trachea."‡ Mr. Alcock, also, emphatically states, that "neither has he met with any case which terminated fatally where, on careful examination, these membranes were found to be free from disease."|| Equally express is the testimony of Martinet, who asserts, that "the danger of these exanthemata consists in their being accompanied with inflammation of some of the organs of the three splanchnic cavities; this complication may indeed be regarded as essential to *scarlatina* and *rubeola*."§

* Med. and Phys. Journal, vol. xx., p. 123.

† Armstrong on Scarlet Fever, &c., p. 14. ‡ Ibid., p. 21.

|| Medical Intelligencer, 1820, p. 156. § Martinet's Manual, p. 291.

As the testimony of independent observers, having no theory to promote, we subjoin two dissections in *scarlatina*, highly illustrative of the results of inflammation in the gastro-pulmonary tissues. "In a child who died on the sixth day, of this distemper, and was opened, the velum pendulum was putrid; the tonsils were outwardly blackish, and livid within; the uvula was covered with a thick mucus, resembling a membrane; the epiglottis was sound, and so was the œsophagus; but that mucous covering descended down the trachea quite to its division, in the upper part of which it appeared like a membrane, in the lower part it was more like mucus."* The following is the *post-mortem* examination of a young woman, æt. 20: "The abdominal viscera were all found perfectly healthy; the lungs were gorged with blood, and some serum had been deposited in the cavity of the thorax. The lining membrane of the larynx was of a dark-brown colour; it looked rather as if it were lined with a piece of wetted brown paper, than with a mucous membrane. The same appearance was seen for a short distance upon the membrane of the œsophagus. The membrane of the trachea was in the highest possible state of inflammation, which inflammation extended into the bronchiæ, as far as they could be traced. The membrane of the trachea was of a deep brick-dust red, approaching to brown; this redness gradually assumed a brighter hue as it extended itself upon

* Heberden's Commentaries, p. 27.

the bronchiæ. The brain was not examined."* Our readers may think us needlessly prolix on a point now so well understood; but the important practical questions which the consideration of *post-mortem* evidence involves, must plead our apology.

While the mildest form of scarlet fever hardly requires any medicines, and, in its simpler anginose variety, is easily controllable by purgatives and the cold or tepid affusions, aided, occasionally, by leeches to the throat; yet, when complicated with intense degrees of inflammation of the mucous membranes or other viscera, it is only by a resolute interference with nature, in her deviations from a salutary course, that health can be restored. Such interference, therefore, however bold and decisive, resolves itself equally with the milder methods of relief, into an agency auxiliary to the *vis medicatrix naturæ*. This assertion, we are aware, admits of dispute, and will be called in question by those who consider blood-letting as essentially a debilitating agent, and therefore inapplicable to the complicated phenomena presented in this disorder. The opinion, however, which refers the train of putrid symptoms, which in the worst cases rapidly develop themselves, solely to some invisible debilitating miasm that acts independently of inflammation or congestion of the vital organs, we would, with Dr. Armstrong, submit at once to the test of *post-mortem* investigation; and if any inference can legitimately be drawn

* Bedingfield's Compendium of Medical Practice, p. 284.

from that source of evidence, we assert it to be, that such symptoms are so constantly found associated with derangements in the structure or condition of vital organs, as to authorize us in concluding such derangements to be essential to their production.

Great obscurity hangs over the pathology of this disease, simply from not discriminating between the primary and secondary events in the order of causation. While the disturbances in the circulation are attributable to a debilitating miasm, these very effects of a primary become a secondary cause in relation to many of the phenomena; as, for example, those of putridity and dropsy. Dr. Good has attributed the latter to the exhausting miasm of *rosalia*; and, for the same reason, "forbids any evacuation that adds so immediately to the direct debility as venesection."* But sounder pathology would have looked to the state of the circulation induced by that miasm, as one which the lancet avails to remedy; and one which, if not so remedied, tends to produce the very disease incorrectly ascribed to an invisible cause. In accordance with these views, Dr. Dewees remarks, "We are inclined to believe that this affection (dropsy) arises from the accompanying inflammation not having been properly subdued by early depleting remedies."† Blood-letting, [therefore, general and local, singly or combined, and adapted in amount to the circumstances of each individual

* Good's Study of Medicine, vol iii., pp. 23, 25.

† Dewees's Practice of Physic, p. 223.

case, is the grand agent on which we chiefly rely in the management of the more dangerous varieties. This powerful remedy, however, requires at once discrimination, promptitude, and discretion. Its inadequate employment, and its abuse, have equally militated against its pretensions. Blood-letting, also, like purgatives, has been proscribed in this disease chiefly through the prejudices engendered by false theories. The despumation of Sydenham, the irritation of Heberden, the debility of Withering, and the putridity of others, equally forbade the lancet. Fothergill, also, imputes the most fatal results both to purgatives and venesection, from their debilitating effects on the system.

The error was venial at a time when the invigorating virtues of cool air and the antiphlogistic regimen were unknown; and when artificial debility was induced by external management, which rendered the operation of lowering remedies positively unsafe. But the moderns are inexcusable—and most of all Dr. Currie, who branded the use of blood-letting and purgatives as “a fatal practice”*—in adhering to dogmas which the vast revolution effected in medical science by observation, experiment, and morbid anatomy, has wholly subverted. We shall, therefore, pass by the oracular prohibitions of the lancet by a host of modern worthies; the responses of the ancient oracles themselves having ceased to command respect, little homage is due to their mere echoes. And yet on such

* Currie's Reports, vol ii., p. 50.

slender authority, it would seem, as that of the majority of our compilers of systems of medicine, a recent anonymous author presumes to teach, that "though the use of the lancet may now be considered as forbidden, yet the occasional use of local bleeding is admissible in certain rare cases."* In reply to this, and other sweeping denunciations of the depletory practice in *scarlatina*, we rejoin, in the pertinent language of Dr. Heightz, of Hanover, that "the mortality of the disease has run parallel to the increasing influence of the Brunonian system." Medicine being no longer an occult science, our reliance must be on those who appeal to experiments on the living, and dissections of the dead.

Dr. Cullen, who holds an intermediate place between the older theorists and modern experimentalists, states, that "when there is a pretty high degree of fever, with a full pulse, and a considerable swelling of the tonsils, bleeding is very proper, especially in adults, and it has been frequently practised with advantage."† The recommendation, however, thus authorized by observation, is, from the influence of theoretic considerations in the writer's mind, too much qualified when he subjoins, "but it should at least not be large, and ought not to be repeated." It is remarkable, that in his plan of treating *cynanche maligna*, "the septic tendency of which is chiefly to be kept in

* Caution to the Public; or, Hints upon the Nature of Scarlet Fever, p. 67.

† Cullen's First Lines, vol ii., p. 197.

view," a similar conflict between theory and observation characterizes his remarks: "The debility with which it is attended," he observes, "renders all evacuations by bleeding and purging improper, except in a few instances where the debility is less, and the inflammatory symptoms more considerable."* Physicians on the continent, Dr. Willan tells us, recommend bleeding both from the arm and jugular vein. Dr. Morton adopted the same practice in London. The methods of Dr. Armstrong, whose decisive use of the lancet in the open forms of excitement is exchanged for its more cautious employment in the insidious congestive varieties of the disease, are too familiarly known to be recapitulated. Dr. Plenciz, as quoted by Dr. Good, "is a strenuous advocate for the use of the lancet." Dewees,† Alcock,‡ Bedingfield,|| Dawson,§ Martinet, and others, recommend an

* Cullen's First Lines, vol. i., p. 291.

† "In case the pulse be full, tense, or hard, immediate recourse is to be had to venesection. The quantity of blood drawn, and the repetitions of the operation, are to be directed, of course, by the judgment and experience of the practitioner. The relief felt by the patient, the appearance of the blood, and the effect on the pulse, must determine whether it shall be repeated."—DR. DEWEE'S *Practice of Physic*, vol. i., p. 221.

‡ "The treatment was strictly antiphlogistic, with early depletion, when the inflammatory symptoms were such as to require it."—*Medical Intelligencer*, 1820, p. 201.

|| "Venesection, employed at the commencement of the disease, in cases where the symptoms of re-action are violent, will secure to the patient a comparatively mild disease."—BEDINGFIELD'S *Compendium*, &c., p. 281.

§ "In *scarlatina anginosa*, where febrile action runs high, bleeding is to be instantly resorted to, and even a second is indicated where symptoms show its propriety." "Even here, in *scarlatina maligna*,

equally energetic practice; and all are agreed in the very great importance of topical depletion. "Leeches," says Martinet, "may be applied behind the ears, on the outside of the throat, below the clavicles, or at the epigastrium, according as the symptoms are those of arachnitis, angina, bronchitis, or gastritis. Should there be great general re-action, which cannot be explained by the condition of any one organ in particular, the abstraction of a moderate quantity of blood from the arm may be employed with much benefit." Such is Martinet's advice on the very onset, before those topical inflammations have burst forth which, his principles inculcate, are only to be extinguished by still more vigorous measures. After all, the use of bleeding in scarlet fever, which, as Drs. Willan and Good have shown, came, by almost general consent, during the last century, to be gradually disused, or employed with a paralyzing caution, is but a revival of the practice of an earlier age. Ætius, as quoted by Dr. Freind, advises bleeding in the exanthemata, in order to prevent the disease from falling upon the vital parts. After combating the vulgar notion that an eruption upon the skin forbids such a practice, from a dread of the humour retreating from the circumference to the centre, Dr. Freind argues, that "lessening the quantity of blood will attenuate its particles, and give them a

I should be reluctant to interdict venesection; but it is only in the first stage it can be used with safety; and never, unless there be high vascular action, or the system appears to be greatly oppressed."—
 DAWSON'S *Nosological Practice of Physic*, pp. 41, 43.

greater freedom to circulate, so that by this means the eruption, instead of being checked, advances in a kindlier manner ; therefore in an erysipelas, small-pox, measles, scarlet fever, &c., if the symptoms run high, and affect the head, the lungs, or any other part, so as to give intense pain, bleeding will be found a very rational and safe practice ; and, in fact, though I have tried no experiment more frequently, I never once observed that any of these eruptions struck in upon bleeding, when the disease required that treatment."*

In ordinary circumstances of the anginose variety, purgatives and leeches, in aid of the usual system of antiphlogistic management, suffice to relieve the complaint. But purgatives require to be perseveringly employed in active doses, until the stage of excitement declines ; and their efficacy may be inferred from considerations regarding the extended surface on which they act, and its sympathies with near, as well as remote, organs. This extensive and complicated mucous surface, too, is, in fevers, impeded in the functions which it has to discharge as an important emunctory ; and hence the necessity of unlocking its secretions, and copiously separating the fluids from the blood.

Second only in importance to purgatives are leeches, applied as closely as possible to the seat of inflammation. By emptying the anastomosing branches of vessels connected with the inflamed membrane or viscus, the congestion of its capilla-

* Freind's History of Physic, vol. i., p. 75. A D. 1725.

ries is still further diminished, and the resolution of the inflammation promoted in proportion. Such was the practice which I pursued in the first variety of the Bridlington epidemic, and with so much success, as to throw me, in some degree, off my guard in encountering the more formidable examples of the third variety especially. In these I had the mortification to experience, in several instances, the entire failure of the combined plan of leeches and purgation. The severity of the disease went far beyond the remedies; and even in some of those cases of the first variety, in which the patient was saved, as in that of my daughter, it is obvious that life was jeopardized by inadequate measures. To say nothing of the danger arising from severe and protracted cerebral disorder, the sloughing of the fauces was a true measure of the perilous intensity of the inflammation. In several examples, therefore, of the purely anginose variety, I afterwards employed the lancet, which both simplified and shortened the course of the fever. Dr. Farre's description of the *cynanche maligna* admirably portrays what occurs in the worst forms of *scarlatina anginosa*: "The inflammatory action, which is vehement, effuses coagulable lymph on the tonsils, and, in the worst cases, on the mucous membranes of the larynx; but the strength of the action is soon spent, the lymph perishes, and the surfaces which effused it die and slough, or open into ill-conditioned ulcers."* It is no wonder,

* Medico-Chir. Trans., vol. iii., p. 330.

therefore, that Dr. Bateman, in the severe epidemic which he has described, should have attributed the fatality of the disease, in many cases, solely to the severe affection of the throat.* To disarm inflammation of the mucous membrane, like this, of its mortal violence, as well as to offer successful resistance to the still more dangerous affections of the brain and stomach, I found it necessary henceforward to employ the lancet with promptitude and vigour; and my success in immediately arresting the fatality of the disease, in the first, second, and third varieties, amply justified the measure. The blood, in every instance, exhibited the buffy coat well defined.

The general rule of management in the severe forms of this epidemic malady being established, it only remains that we should notice those exceptions which imply the utmost circumspection with regard to general bleeding. The cases demanding a delicate and guarded management belong chiefly to the third and fourth varieties, as above delineated, or exclude themselves from that arrangement by the eccentricity of their characters and course. Where there is palpable congestion of the brain, and those important viscera immediately concerned in carrying on the business of life, manifested by a sudden and overpowering invasion, as in the Asiatic cholera, we call in the aid of the lancet, the adjuncts being ammonia internally, and warmth externally.

* Reports of the Diseases of London, p. 271.

' If any thing can countenance the doctrine of debility from an overpowering contagious miasm, these insulated cases must have this effect. Respect to a debilitating cause, and its immediate effects on the nervous system, doubtless warrants, in these instances, a modification of the usual plan of treatment, and, especially, caution in the use of the lancet. Ammonia, the warm or spirit air-bath, with frictions, together with one moderate venesection, regulated by the state of the circulation, and followed by calomel, constitute, in these appalling circumstances, the principal resources of art. Dr. Armstrong has offered some ingenious suggestions to supply the *hiatus* which every one must feel in our remedies; and Dr. Lange, of Cronstadt, has adopted, with great success, in the analogous oppressive stage of spasmodic cholera, the use of salt emetics, and the actual cautery applied to the spine. The inhalation of vivifying gases, galvanism, and other resources of chemistry, are among remedies still under probation. The observation, in short, of the asphyxial form of this pestilence on the arena of British experiment, holds out a reasonable expectation of improvement in the treatment of that oppression of the nervous system which follows the reception of the worst contagious miasms. The intimate union of the nervous and vascular systems leads us to look for the development of the injury inflicted on the former, in the errors of the latter; and an oppressed circulation is the morbid effect to which our remedies, though not exclusively, are imperatively directed. The

most frightful debility is here no obstacle to a cautious employment of the lancet, which, in combination with stimulants, at once lessens present engorgement, and future inflammation of the vital organs. The debility of more ordinary fevers will henceforward be viewed through the medium of an analogy, which will strip it of its Brunonian attributes.

The preceding remarks require accommodation when applied to those low typhoid or comatose cases in which the prostration of the vital powers is less complete, and a partial re-action takes place. In the milder examples of this irregular type, the lancet may be wholly laid aside, and leeches substituted. "In the irregular form of the congestive scarlet fever, or that in which the excitement is partially developed, purgatives and the warm bath," says Dr. Armstrong, "are the best remedies;" and they must be persevered in, he observes, "so long as the general oppression and irregular state of the excitement remain." It was by purgatives, chiefly, that Dr. Hamilton succeeded in an epidemic resembling very much this irregular congestive variety.

Delicate management, also, is required in the fourth variety, especially in its advanced stages. In adults, indeed, in whom the disease proceeds with a less fatal rapidity, and, at the very onset of re-action, also in young children, the lancet may be used more freely in the former, but sparingly in the latter. But if the inflamed surface bear a large proportion to the whole bronchial membrane, the due decarbonization of the blood is so much

prevented, that the patient rapidly becomes apoplectic, or dies exhausted, with a livid complexion, lips blue, and a rattling in the air-passages. It is in such circumstances, especially when called in after the disease has made some progress, that general bleeding becomes a doubtful remedy, by further weakening the already too much weakened action of the heart. Here ammonia, in small doses, combined with topical depletion, mild purgatives, and immersion in the warm bath, shed a doubtful ray of hope, but too often fail to relieve. Dr. Armstrong recommends, in these cases, about a drachm of the solution of chlorine, mixed with six ounces of distilled water, to be given in the course of twenty-four hours.* The vegetable acids, also, added to bland mucilaginous fluids, in this, as well as in every form of the disease, are grateful and salutary. The citrate of potass or soda, in a state of effervescence, is, perhaps, one of the best febrifuges, though recommended at first in this disease, by Dr. Watson, as an antiseptic and tonic.† In the decline of fever it is advantageously exchanged for the effervescing citrate of ammonia. The only remaining qualifying considerations of the general rule of practice respect the rapid course of the disease, and the greater irritability of the nervous system of children. The former suggests an early and decisive employment of the lancet in the acute forms of the disease, while both preclude its fre-

* See Dr. Armstrong's Lecture on *Scarlatina* in the *Lancet*, vol. vii., p. 324.

† *Med. and Phys. Journal*, vol. xvi., p. 552.

quent repetition, the necessity for which is obviated by the powerful auxiliaries which we possess in calomel and leeches. Having made a decided impression on the disease, we must desist from over-active efforts, lest nature herself be incapacitated for retracing her devious course. It is a golden observation of Dr. Farre's, that, "by those who will take the pains to consider inflammation as a process, it will be understood that it may be checked, but cannot be suddenly extinguished, by the most active means ; time must be allowed for the process to decline, even after the fairest efforts have been made to arrest its progress." *

* Med. Chir. Trans., vol. iii., p. 327.

APPENDIX.

RECOLLECTIONS OF THE EPIDEMIC SCARLET FEVER WHICH PREVAILED IN BRIDLINGTON AND THE NEIGHBOURHOOD, IN 1831. BY THOMAS HAGYARD, ESQ., SURGEON, HUNMANBY.

THE following sketchy report of the commencement of the horrible and fatal disease at Hunmanby,—the subsequent progress and decline of which, when it reached Bridlington, you have faithfully described,—is very much at your service. Its principal value consists in confirming the observation of others,—that all epidemic diseases are most violent and unmanageable at the onset. This results partly from the innate malignity of the pestilential miasm, before its diffusion has, in some degree, diluted its virulence; and partly because the medical observer has yet to learn its characteristic effects on the animal economy, before he can adapt his remedies with the precision essential to their successful operation. Several of my earliest patients were hurried off with a more frightful rapidity than occurred to your observation, having never, in fact, emerged from the stage of oppression, or, as it proved, of collapse. For my own convenience, and practical purposes, I classified the disease into four varieties, designated by the symptoms which marked the onset and progress of the malady.

1. The *choleric*, characterized by purging and vomiting, which proved suddenly fatal. Neither rash nor cynanche was developed in these cases.

2. The *irregular*, which was marked by sudden and imperfect exacerbations and remissions of fever. The sensorium was much disturbed; the fauces and nostrils became much affected in the progress of the disease; the rash was but seldom fully developed. This form was very fatal, as, in my practice, active measures could not be adopted. I have seen fatal collapse result from the application of a few leeches.

3. The *inflammatory*, denoted by a speedy and steady developement of the rash, and inflammation of the fauces.

4. The *congestive* was ushered in by sensorial disturbance, vomiting, and, generally, convulsions. This form was fatal, but not so much so as the first.

In the first variety an opportunity was but seldom afforded to adopt any measures to avert its fatal career. The warm saline bath and soothing medicines were occasionally serviceable. In one instance I successfully checked it by the chalk mixture and opium, along with the bath, which apparently converted it into a more manageable form, as the rash made its appearance.

The second variety was managed with difficulty. Tepid sponging of the surface, when well done, was very useful. Leeches applied to the throat, nape of the neck, or scrobiculus cordis, were of striking benefit, when, as before stated, collapse did not ensue. Calomel and James's Powder were useful. Castor oil was my favourite aperient. Syringing the throat with a solution of chloride of soda did good. In this form, dropsical symptoms were often a result.

The third, or *inflammatory* variety, was generally easily managed, and successfully combated by bleeding, with a promptness and celerity commen-

surate to the severity of local symptoms, and ardency of the fever, along with calomel and active purgation. The good effects of this plan were striking and beautiful.

In the fourth species, when ushered in by convulsions and other marks of cerebral congestion, the danger was in many instances averted by bleeding in the jugular vein, calomel, and purgation. This plan almost always succeeded, when timely adopted.

In convalescence I always enjoined strict attention to the condition of the skin, ordering it to be washed with soap and water, and well rubbed. When this was duly attended to, a satisfactory and progressive recovery was generally effected. It was of the first importance to keep the skin warm by flannel. I well remember the fate of some children who, from exposure to two successive foggy days, were attacked by effusion in the chest, and speedily carried off.

Much was formerly said in favour of carbonate of ammonia in *scarlatina*. I thought there were indications for its use in the irregular form of the disease; but I confess I could seldom prevail with children to take the medicine in adequate doses; its pungency and unpleasantness evidently produced in them the strongest aversion and disgust.

THE END.